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William J. Schramm
Reising Ethington, Barnes, Kisselle, P.C.
P.O. Box 4390
Troy, MI 48099

EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/675,138
Filing Date: September 30, 2003
Appellant(s): HARJULA ET AL.

MAILED
MAR 14 2007
GROUP 1700

William J. Schramm
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 29, 2006 appealing from the Office action mailed January 25, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,858,243	Bedard	1-1999
5,888,398	Dietz et al.	3-1999

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim 22 stands rejected under 35 U.S.C. 102(e) as being anticipated by Bedard (U.S. Patent No. 5,858,243). Bedard discloses extracting metal ions (see col. 5, lines 29-32) from an aqueous solution (see col. 1, lines 14-15) with a silicate material (see col. 2, lines 49 and 53) containing niobium, tantalum, antimony or mixtures thereof (see col. 2, lines 59-61); and one of ordinary skill in the fluid purification art would, on reading the Bedard patent, at once envisage a mixture of antimony and niobium or tantalum as the metal component of the disclosed silicate material. Also, since Applicant has not shown that the presence of titanium in the recited material would materially change the characteristics of Applicant's invention, the "consisting essentially of" language recited in line 2 of claim 22 has been construed as equivalent to comprising.

Claims 2-4, 17-19 and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bedard. Bedard discloses removing contaminant metal ions of the type recited (see col. 5, lines 29-32) from an aqueous stream (see col. 1, lines 14-15) with a crystalline silicate material (see col. 2, lines 49 and 53) containing niobium, tantalum, antimony or mixtures thereof (see col. 2, lines 59-61). This reference further suggests the ratio recited in claim 2, as well as the concentration recited in claims 3 and 4 (see col. 2, lines 61-63). Accordingly, this reference discloses the claimed invention with the exception of the exact ingredients selected to prepare the reference treatment material. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a combination of antimony with niobium or

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tantalum as constituent "M" in the reference material, since this reference clearly suggests such a mixture of elements (col. 2, lines 59-61); and upon such a selection being made, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a silicon compound, an antimony compound, and a compound of niobium or tantalum to prepare this reference material, since this reference material (i.e. crystalline silicate) clearly requires the presence of silicon, antimony and niobium or tantalum. Furthermore, since silicates are typically prepared from silicic acid, it would have been obvious to one of ordinary skill in the art to employ this silicic acid as the source of silicon in preparing the reference material.

Claims 7, 9, 10, 20 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bedard as applied above, and further in view of Dietz et al. (U.S. Patent No. 5,888,398; hereinafter "Dietz"). Bedard discloses the claimed invention with the exception of the recited pH for the aqueous stream, the removal of radioactive metal ions, and the presence of background ions in the stream undergoing treatment. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to treat a nuclear waste stream of the type recited (i.e. containing radioactive cesium and background ions such as sodium and calcium) having a pH of less than 7 by the process of Bedard (see col. 1, lines 14-15), since Dietz teaches (see col. 1, lines 22-27) that such nuclear waste streams are typically acidic; and further teaches (see col. 6, lines 3-6) that such streams contain background ions such as sodium and calcium.

(10) Response to Argument

Appellant argues that claim 22 is not anticipated by Bedard because the material of Bedard "could not be described as an antimony silicate because it requires the presence of an alkali metal." Appellant then points out that this reference material is a molecular sieve (page 11, first paragraph of the brief). This argument should not be deemed persuasive of patentability by the Board of Appeals. It is submitted that the terms "molecular sieve" and "silicate" are not mutually exclusive. A molecular sieve is a crystalline substance (e.g. zeolite) having an open-network structure containing pores of molecular dimension that can adsorb small molecules and other substances. Molecular sieves are very often silicates (e.g. aluminosilicates). In any event, the molecular sieve material of Bedard clearly contains silicon bonded to oxygen (see the formula in line 53 of col. 2); and therefore, this reference material is deemed to be a silicate. Since this reference silicate can also contain antimony (see col. 2, line 60), it is deemed to be an antimony silicate. Furthermore, since this reference silicate can also contain niobium and/or tantalum in combination with this antimony (see col. 2, line 60), it is deemed to be an antimony silicate doped with niobium and/or tantalum, as required by appealed claim 22.

Appellant also argues that titanium must always be present in the material of Bedard, and that the phrase "consisting essentially of" excludes materials such as titanium. Again, this argument should not be deemed persuasive of patentability by the Board of Appeals. It is submitted that since Appellant contends that the additional materials in the prior art are excluded by the recitation of "consisting essentially of,"

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Appellant has the burden of showing that the introduction of these additional components would materially change the characteristics of Appellant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also Ex parte Hoffman, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989). Absent such a showing, "consisting essentially of" will be construed as equivalent to "comprising" (PPG, 156 F.3d at 1355, 48 USPQ2d at 1355). See M.P.E.P. § 2111.03. Since Appellant has not provided the above noted showing, the term "consisting essentially of," recited in claims 17 and 22, has been construed as equivalent to comprising.

Appellant has submitted a declaration, by Dr. Alan Minihan, in an attempt to show that titanium is undesirable as a dopant for antimony silicate. This declaration should not be deemed persuasive of patentability by the Board of Appeals. It is submitted that the data presented in this declaration appears to compare tungsten doped antimony silicates against titanium doped antimony silicates for the removal of cesium (Cs), strontium (Sr) and cobalt (Co) from nitric acid solutions. However, this declaration does not appear to compare antimony silicates doped only with tungsten against antimony silicates doped with both tungsten and titanium; and therefore, this declaration does not show that the presence of titanium in the recited material would materially change the characteristics of Appellant's invention. Accordingly, the "consisting essentially of" language recited in claims 17 and 22 should still be construed as equivalent to comprising. Furthermore, since the claims in this application are not limited to tungsten doped antimony silicates (i.e. the antimony silicate could be doped with niobium and/or tantalum), nor are they limited to the removal of cesium, strontium

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or cobalt from nitric acid solutions, the results presented in this declaration are not commensurate in scope with the claims in this application; and therefore, these results do not show that the presence of titanium in the recited material would materially change the characteristics of Appellant's claimed invention.

With respect to claim 17, Appellant argues that Bedard does suggest the use of an acid for preparing the antimony silicate doped materials. Once again, this argument should not be deemed persuasive of patentability by the Board of Appeals. It is submitted that since silicates are typically prepared from silicic acid, it would have been obvious to one of ordinary skill in the art to employ this silicic acid as the source of silicon in preparing the reference material; and upon such modification, this reference material will be "obtained by reacting ... in the presence of an acid" as required by appealed claim 17.

With respect to claim 9, Appellant argues that Bedard does not disclose treatment of an acidic media, nor the removal of radioactive materials. Once again, this argument should not be deemed persuasive of patentability by the Board of Appeals. It is submitted that since Bedard discloses the removal of cesium (see col. 1, line 14) from an aqueous stream, and since Dietz teaches that radioactive cesium is typically found in acidic waste streams (see col. 1, lines 22-27), it would have been obvious to one of ordinary skill in the art at the time the invention was made to treat a nuclear waste stream of the type recited (i.e. having a pH of less than 7 and containing radioactive cesium) by the process of Bedard.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Ivars C. Cintins

Conferees:


Steven Griffin
Duane Smith